

CLAIMS

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1. A polyether polyurethane comprising:
 - (A) at least one polyisocyanate having two or more isocyanate groups, which is selected from the group consisting of an aromatic polyisocyanate and an aliphatic polyisocyanate;
 - (B) a polyoxytetramethylene glycol (PTMG); and
 - (C) at least one chain extender selected from the group consisting of a C₂-C₁₀ polyol having two or more hydroxyl groups and a C₂-C₁₀ polyamine having two or more amino groups,
wherein said PTMG has the following characteristics (1) to (3):
 - (1) a number average molecular weight of from 500 to 4,000;
 - (2) a molecular weight distribution of 1.75 or less in terms of the Mw/Mn ratio, wherein Mw represents the weight average molecular weight of PTMG and Mn represents the number average molecular weight of PTMG;
and
 - (3) a content of high molecular weight PTMG molecules of 10 % by weight or less, based on the total weight of all PTMG molecules, wherein said high molecular weight PTMG molecules are defined as PTMG molecules

having molecular weights which are at least six times as large as the number average molecular weight of all PTMG molecules.

5 2. The polyether polyurethane according to claim 1,
wherein said PTMG has a heteropolyacid content of from
10 to 900 ppb by weight.

10 3. The polyether polyurethane according to claim 1,
wherein the content of high molecular weight PTMG molecules in said PTMG is 2 to 5 % by weight.

15 4. A urethane prepolymer comprising:
(A) at least one polyisocyanate having two or more isocyanate groups, which is selected from the group consisting of an aromatic polyisocyanate and an aliphatic polyisocyanate; and

20 (B) a polyoxytetramethylene glycol (PTMG),
said urethane prepolymer having terminal isocyanate groups,

wherein said PTMG has the following characteristics (1) to (3):

25 (1) a number average molecular weight of from 500 to 4,000;
(2) a molecular weight distribution of 1.75 or

less in terms of the Mw/Mn ratio, wherein Mw represents the weight average molecular weight of PTMG and Mn represents the number average molecular weight of PTMG; and

5 (3) a content of high molecular weight PTMG molecules of 10 % by weight or less, based on the total weight of all PTMG molecules, wherein said high molecular weight PTMG molecules are defined as PTMG molecules having molecular weights which are at least six times
10 as large as the number average molecular weight of all PTMG molecules.

15 5. The urethane prepolymer according to claim 4, wherein said PTMG has a heteropolyacid content of from 10 to 900 ppb by weight.

6. The urethane prepolymer according to claim 4, wherein the content of high molecular weight PTMG molecules in said PTMG is 2 to 5 % by weight.

20 7. The urethane prepolymer according to claim 4, wherein said terminal isocyanate groups are partly or wholly modified to have at least one functional group other than an isocyanate group, wherein said at least 25 one functional group is introduced to said terminal

~~isocyanate groups by addition.~~

8. The urethane prepolymer according to claim 7,
wherein said functional group is selected from the
5 group consisting of a (meth)acryloyl group and a silyl
group.

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